

SCIENCE FROM HOME

BLOWING UP BALLOONS WITH YEAST

Instructions:

1. Label the four bottles as 0, 1, 2, and 3 tsp sugar.
2. Use the funnel to add the labeled amount of sugar to each bottle.
3. Add $\frac{3}{4}$ cup (200mL) of water to each bottle.
4. Add one packet of yeast (~2.5tsp) to each bottle
5. Cap the bottles and shake them to mix all ingredients.
6. Remove the lids.
7. Place a balloon on top of each bottle. If needed, use a rubber band to make sure they stay in place.
8. Place the bottles in a warm room and wait 2-3 hours.
9. Examine the bottles and balloons. Discuss your findings.

Questions:

How do cells produce energy?

What causes the balloons to inflate?

Why are some balloons bigger than others?

How it works:

We eat food and when it is digested our bodies absorb glucose which reacts with oxygen to produce adenosine triphosphate (ATP). ATP is an energy source for cells. This process is called cellular respiration. Carbon dioxide (CO₂) is a byproduct of cellular respiration. Yeast are small, single celled organisms that also use glucose and oxygen to produce energy through cellular respiration.

Going beyond:

What are the dependent and independent variables in the experiment?

How could you change the variable to redesign the experiment?

Why is a control important in scientific experiments?

Materials:

4 narrow mouthed bottles with lids

Measuring cup

Marker

Funnel

4 Balloons

Rubber Bands

Sugar

Teaspoon

Water

Fast-action Yeast

Key terms:

Cellular Respiration

ATP

Yeast

